

The TZUY TURBINE uses STEAM and GAS POWER

We understand already that the usual flow of the working fluid 27 (water, gas, air or steam) inside the TZUY TURBINE starts from the intake pipe 5 to the external entrance chamber 11 passing through a hole 9 then to the internal entrance chamber 8, then to the left and right rectangular opening 8a and 8b. The working fluid 27 will enter the semi-circular canals 21 and 20 of the left and right covers 4 and 3 of the housing or casing 2 and pushing the protruding power side of the blade 13 in a powerful rotary motion. The used fluid 28 will be squeezed out to the exhaust pipe 6 by the exhaust side of the blade 13 by passing 7a and 7b rectangular opening of the internal exit chamber 7 then through a hole 10 reaching the external exit chamber 12 then to the exhaust pipe 6.

We can see the drawing on page 50 a boiler fueled by wood. The water inside the boiler is heated immediately and turned to steam by using several water tubes. When the right steam pressure is attained a valve can be opened to power the TZUY TURBINE. This is the power of steam through external combustion.

We can see also the air supply tank and a compressed natural gas tank. The 3 combustion chambers are fitted or mounted on the outer shell of the housing or casing. The hole or exhaust opening of each of the combustion chamber is directly connected to the external entrance chamber of the rotor to provide a stream of hot expanding working fluid.

Let's now operate first the TZUY TURBINE using the power of gas through internal combustion. Please refer to the drawing on the next page. We have to open the valve of the compressed natural gas and the valve of the air supply tank. The plunger of the air and fuel metering device is moved to open the gates to let the air and fuel pass. The compressed natural gas fuel will flow through the fuel pipe reaching the 3 combustion chambers by means of the fuel injectors. The compressed air also will flow through the air pipe and also reaching the 3 combustion chambers by means of the air injectors. The air and fuel are already mixed inside the 3 combustion chambers. The mixture needs a spark to make it explode. The ignition switch is now switched on and also the contact breaker switch to activate the contact breaker. The ignition coil now produces a high voltage and makes the 3 spark plugs spark in the 3 combustion chambers. The spark inside the combustion chambers will produce a powerful explosion. The expanding gases will find a way out to push the power side of the protruding blade of the rotor to make it rotate powerfully. This is the power of gas through internal combustion.

We assumed now that the TZUY TURBINE is rotating by means of the power of the hot expanding gases from the 3 combustion chambers. When we open the valve of the boiler the pressurized steam will enter also inside the rotor through the external entrance chamber. The hot expanding gases which occupy the external entrance chamber will let the wet steam expand more and provide additional power to spin the TZUY TURBINE and the load.

We understand now that the TZUY TURBINE ENGINE can be powered by steam power or gas power one at a time or at the same time.